

AMENDMENTS TO THE CLAIMS

Please amend Claims 1-9 and 12-14 as follows, without prejudice or disclaimer to continued examination on the merits:

1. (Currently Amended) An optical node apparatus, comprising:

a through path coupler having at least first and second outputs, said the through path coupler configured to optically connect to an input port for receiving an input optical signal and configured to provide a first through optical signal on the first output and a second through optical signal on the second output;

a first optical filter for optically connecting to the first output port and configured to filter the first through optical signal; and

a selective connector configured for enabling selective optical connection to an output of said the first optical filter,;

wherein the second output port is configured to accept a second optical filter and said the selective connector is configured to switch optical connection to an output of said the second optical filter without any substantial disruption to an operation of said the optical node apparatus.;

wherein the optical node apparatus is reconfigurable while in-service and comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network; and

wherein the optical node apparatus comprises connections to permit in-service maintenance.

2. (Currently Amended) The optical node apparatus of claim 1, wherein said the second optical filter is an upgraded filter relative to said the first optical filter.

3. (Currently Amended) The optical node apparatus of claim 1, further comprising: a drop coupler optically connected to the input port and outputting the input optical signal to said the through path coupler via a through path and also outputting the input optical signal to a drop path; and an add coupler optically connected to receive the output of said the first or second optical filter selected by said selective connector and optically connected to an add path for outputting an output optical signal to an output port.

4. (Currently Amended) The optical node apparatus of claim 3, wherein said the selective connector is an optical switch.

5. (Currently Amended) The optical node apparatus of claim 3, further comprising: a first variable optical attenuator optically placed between said the first optical filter and said the selective connector; and a second variable optical attenuator optically placed between said the second optical filter and said the selective connector;

6. (Currently Amended) The optical node apparatus of claim 5, wherein said the selective connector is an optical switch.

7. (Currently Amended) The optical node apparatus of claim 5, wherein said the first and second variable optical attenuators are configured to be operated in a manner such that only one of the attenuators is disabled from attenuating at any given moment.

8. (Currently Amended) The optical node apparatus of claim 7, further comprising a combining coupler optically connected to said the first and second variable optical attenuators as inputs and optically connected to said the add coupler.

9. (Currently Amended) The optical node apparatus of claim 3, wherein at least one of said the first and second optical filters is a spectral blocking filter configured to permit

a subset of a spectrum of the input optical signal to pass through while blocking a complementary subset of the spectrum of the input optical signal.

10. (Original) The optical node apparatus of claim 9, wherein the subset is a contiguous portion of the spectrum.

11. (Original) The optical node apparatus of claim 9, wherein the spectral blocking filter is a reconfigurable blocking filter.

12. (Currently Amended) The optical node apparatus of claim 3, wherein said the drop coupler is a first drop coupler and said the add coupler is a first add coupler, the optical node apparatus further comprising: a first circulator optically placed between said the first drop coupler and said the through path coupler; a second circulator optically placed between said the first add coupler and said the selective connector; a second drop coupler optically connected to said the second circulator; and a second add coupler optically connected to said the first circulator, wherein said the first circulator is configured to direct optical signal traffic from said the first drop coupler to said the through path coupler and to direct optical signal traffic from said the through path coupler to said the second add coupler and said the second circulator is configured to direct optical signal traffic from said the selective connector to said the first add coupler and to direct optical signal traffic from said the second drop coupler to said the selective connector.

13. (Currently Amended) A fiber optic transmission system, comprising:
a plurality of transmitters configured to transmit input signals;
a multiplexer optically connected to a fiber optic line, said multiplexer configured to multiplex signals from said the plurality of transmitters to the fiber optic line;
a demultiplexer optically connected to the fiber optic line, said the demultiplexer configured to demultiplex optical signals from the fiber optic line;

a plurality of receivers configured to receive the demultiplexed signals from the demultiplexer; and

one or more optical add/drop nodes of claim 3 optically placed between said the multiplexer and said the demultiplexer; ;

wherein an optical node apparatus within the fiber optic transmission system is reconfigurable while in-service and comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network; and

wherein an optical node apparatus within the fiber optic transmission system comprises connections to permit in-service maintenance.

14. (Currently Amended) The fiber optic transmission system of claim 13, wherein at least one of said the optical add/drop nodes includes a spectral blocking filter configured to permit a subset of a spectrum of the input optical signal to pass through while blocking a complementary subset of the spectrum of the input optical signal.

15. (Original) The fiber optic transmission system of claim 14, wherein the subset is a contiguous portion of the spectrum.

16. (Original) The fiber optic transmission system of claim 14, wherein the spectral blocking filter is a reconfigurable blocking filter.

17. (Withdrawn) The fiber optic transmission system of claim 13, further comprising a plurality of optical spectrum equalizers optically placed between any two optical add/drop nodes to sufficiently attenuate one or more chosen wavelengths to allow the chosen wavelengths to be reused in subsequent segments of said fiber optic transmission system.